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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/753,904	01/08/2004	Damian Kucharczyk	Q79161	8168
25693	7590	01/25/2006		
KENYON & KENYON LLP RIVERPARK TOWERS, SUITE 600 333 W. SAN CARLOS ST. SAN JOSE, CA 95110			EXAMINER MIDKIFF, ANASTASIA	
			ART UNIT 2882	PAPER NUMBER

DATE MAILED: 01/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/753,904	KUCHARCZYK, DAMIAN	
	Examiner	Art Unit	
	Anastasia Midkiff	2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>08 January 2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 3 and 4 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

With respect to Claim 3, Line 2, the term, "sagittal mirror," is not understood in the art, and it would not be possible for one of ordinary skill to make or use the invention as claimed.

With respect to Claim 4, Lines 2-3, the limitation, "the optic housing is adjustable relative to the sealed X-ray tube by independent rotation in each of a first pair of substantially orthogonal directions," requires rotation of the housing in two directions that are substantially at right angles to each other. Although Examiner can see how housing may pivot in one direction and its complete reverse direction in the same plane using the adjustment screws, there is no mechanism provided in the claims or specification to allow rotation of the housing in a pair of orthogonal directions. Therefore, it is not possible for one of ordinary skill in the art to make/or use the invention as claimed.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 3 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to Claim 3, line 2, the limiting meaning of "sagittal," as it pertains to the mirror, cannot be ascertained and, therefore, is indefinite. For examination purposes, this limitation has not been afforded any patentable weight.

With respect to Claim 10, lines 2-3, it is unclear what applicant means by the phrase, "holding a sample in the path of the focussing [sic] X-rays." The rays are focused by the optics, and placing the sample in the path of the "focussing" rays suggests that the sample is placed directly behind the optic, before the beam has been fully focused, which is in direct conflict with applicant's specification and all figures. Examiner suggests rewording the Claim as --holding a sample in the focused X-rays-- or other appropriate wording.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the

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applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent to Chen (USP# 6,829,327).

With respect to Claim 1, Chen teaches a high flux x-ray source comprising a sealed X-ray tube (12, and Column 7, Lines 62-65), a multi-layer optic (14, and Column 4, Lines 25-44) with a housing in the form of a backing plate with a supportive surface (Column 12, Lines 27-30), wherein the multi-layer optic is located at a predetermined distance from the sealed x-ray tube (Column 7, Lines 37-47), and the optic housing is adjustable relative to the sealed x-ray tube, being placed before or after a beam conditioner aperture (16), wherein said beam conditioner being adjustable to the source and the source adjustable to the optic housing is, therefore, adjustable relative to the optic housing (Column 5 Lines 46-52).

With respect to Claim 2, Chen further teaches the multi-layer optic is a confocal mirror (Column 4, Lines 25-36).

With respect to Claim 10, Chen further teaches a means (18) for holding a sample in the path of the focused X-rays (Column 3 Lines 64-68, and Column 4 Lines 1-5).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 5, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. patent to Hayashi et al. (USP# 6,249,566) in view of U.S. Patent to Kurtz et al. (USP# 6,882,739).

With respect to Claim 1, Hayashi et al. teach a high flux x-ray source comprising a sealed X-ray tube (32, Column 11 Lines 2-5, and Column 14 Lines 52-53), a multi-layer optic (52, and Abstract, Lines 1-9), such optics known to be enclosed in a housing, wherein the multi-layer optic is located at a predetermined distance from the sealed x-ray tube (Column 11, Lines 13-20), and the optic housing is adjustable relative to the sealed x-ray tube (Column 14, Lines 32-47).

Hayashi et al. does not teach a beam conditioner that is adjustable relative to the optic housing.

Kurtz et al. teach an x-ray diffractometer wherein the sealed tube x-ray source (Column 9, Lines 56-61) has a beam conditioner in the form of a collimator (55) that is adjustable relative to the source to allow changes in beam size and divergence for directing radiation energy to a point on a sample being examined (Column 5, Lines 6-10).

It would have been obvious to one of ordinary skill in the art to use the collimator of Kurtz et al. in the apparatus of Hayashi et al., wherein said collimator, being adjustable to the source, would then be adjustable to the optic housing, for the purpose

of additional control of the x-ray beam for more precise sample measurements, as taught by Kurtz et al. (Column 5, Lines 6-10).

With respect to Claim 2, Hayashi et al. further teach said multi-layer optic is a confocal mirror, comprised of two reflecting monochromators made of multi-layer films (Column 6, Lines 30-65 and Figures 4-5).

With respect to Claim 5, Hayashi et al. further teach optic is adjustable relative to the x-ray tube by independent translation in each of a pair of substantially orthogonal directions (Column 14, Lines 32-47).

With respect to Claim 10, Hayashi et al. further teach a means for holding a sample (50) in the path of the focused X-rays (Column 6, Lines 53-60). (Examiner notes that Kurtz et al. also teach a sample handling apparatus for maneuvering sample in path of x-ray beam in Column 8, Lines 11-24.)

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen as applied to claim 1 above, in view of U.S. Patent to Chapman et al. (USP# 5,987,095).

With respect to Claim 6, Chen discloses the elements of Claim 1, as discussed above, but does not teach a shutter housing adapted to receive a portion of the optic housing.

Chapman et al. teaches an x-ray analyzer wherein there is a shutter (14), of necessity including a housing to be used as such, positioned between the x-ray source and the crystal analyzer optic (30) to control exposure and eliminate unnecessary scatter of x-rays (Column 4, Lines 53-57).

It would have been obvious to one of ordinary skill in the art to use the shutter of Chapman et al. in the device of Chen, in order to minimize exposure and eliminate extra scattering of x-rays, as taught by Chapman et al (Column 4, Lines 53-57).

Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen as applied to claim 1 above, in view of U.S. Patent to Richardson et al. (USP# 6,377,651).

With respect to Claims 7 and 8, Chen teaches the elements of Claim 1 as disclosed above, but does not teach that the optic housing is filled with an inert gas, or that said gas is helium.

Richardson et al. teach that optics used in x-ray systems experience damage due to x-ray flux and plasma particle emissions, and these damages can be mitigated by using a background gas of helium in the optics area (Column 1, Lines 34-41).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the inert helium gas of Richardson et al. in the optic housing of the device of Chen, to avoid damaging the optics with x-radiation flux, as taught by Richardson et al. (Column 1, Lines 34-41).

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen as applied to claim 1 above, in view of U.S. Patent to Keem et al. (USP# 4,525,853).

With respect to Claim 9, Chen discloses the elements of Claim 1, as discussed above, but does not teach a moveable x-ray beam stop.

Keem et al. teach an x-ray diffraction source with optics, wherein there is a beam stop of lead, moveable along the optic axis, to prevent axial X-rays from impinging on a focus point as is typical of conventional systems in the art (Column 6, Lines 47-54).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the beam stop of Keem et al. in the device of Chen, to prevent axial X-rays from impinging on a focus point, as taught by Keem et al. (Column 6, Lines 47-54).

Response to Arguments

Applicant's arguments filed 28 October 2005 have been fully considered but they are not persuasive. The prior art rejections under 35 U.S.C. 103 (a), detailed in the office action dated 28 June 2005 are upheld for the following reasons:

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention

where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

In this case, applicant traverses Examiner's rejection of Claims 1-5 and 7-10 under 35 U.S.C. 103 (a) as unpatentable over USP 6,882,739 (Kurtz) in view of USP 6,493,421 (Gutman), and also rejection of Claim 6 under U.S.C. 103 (a) as unpatentable over Kurtz and Gutman in view of USP 5,987,095 (Chapman), and alleging that Examiner used improper hindsight to combine the multi-layer optics of Gutman in the sealed X-ray tube of Kurtz. Applicant alleges that the linear X-ray sources, as used in Gutman, require optics of higher quality than those used in sealed X-ray tubes, citing this as the reason that said optic would not, "work successfully," in a sealed tube. Examiner contends that if the sealed tube source requires optics with less quality than the linear accelerator source, that the optic would work successfully in the sealed tube source. The question is one of motivation.

Applicant alleges that, "the ordinarily skilled artisan...would not have appreciated the ability even to use a multilayer optic with a sealed tube," or vice versa, and that, "prior to the present invention, no one had tried such a combination - there was a prejudice in the technical field against doing so," citing these reasons as the lack of motivation and/or obviousness to combine the references. Examiner contends that sealed X-ray tubes had been combined with multilayer optics before applicant's priority filing date, and that there was not a prejudice in the field against doing so, as evidenced

by the additional new rejections based on U.S. Patents to Chen (USP# 6,829,327) and Hayashi (USP# 6,249,566), submitted in the above action.

Furthermore, Examiner notes that designating a source as a, "sealed X-ray tube," does not confer any limitation on the anode other than the fact that must sit within a sealed enclosure with the cathode to provide a sealed, contained X-ray source, and does not inherently exclude linear sources or rotating anode sources, as noted in the specification objection above.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anastasia Midkiff whose telephone number is 571-272-5053. The examiner can normally be reached on M-F 7-4.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Glick can be reached on 571-272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ASM
1/14/06



EDWARD J. GLICK
SUPERVISORY PATENT EXAMINER



1/17/06